WHAT IS CLAIMED IS:

1.   An apparatus comprising:

a signal generator adapted to generate a positioning signal comprising a first half-field and a second half-field;

wherein each of the first and second half-fields comprises 313 segments; and

wherein each of the segments comprises 832 chips comprising an American Television Standards Committee (ATSC) digital television (DTV) segment synchronization signal and a pseudonoise sequence; and

a transmitter adapted to transmit the positioning signal.

2.   The apparatus of claim 1, wherein the pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

a Global Positioning System L5 code.

3.   The apparatus of claim 1, wherein a user terminal receives the positioning signal and determines the location of the user terminal based on the positioning signal.

4.   The apparatus of claim 1, wherein the segments are generated at a segment rate, further comprising:

a modulator adapted to modulate at least one of the group consisting of the first half-fields and the second half-fields of the positioning signal using a further pseudonoise sequence having a chip rate corresponding to the segment rate.

5.   The apparatus of claim 1, wherein the further pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

a Global Positioning System L5 code.

6.   The apparatus of claim 1, wherein the half-fields are generated at a half-field rate, further comprising:

a modulator adapted to modulate at least one of the group consisting of the first half-fields and the second half-fields of the positioning signal using a binary data stream having a bit rate corresponding to the half-field rate.

7. The apparatus of claim 1, wherein the binary data stream represents at least one of the group consisting of:

a time of day;

a date; and

a year.

8. The apparatus of claim 1, further comprising:

a time receiver adapted to receive an accurate time signal;

wherein the transmitter is further adapted to transmit the positioning signal according to the accurate time signal.

9. An apparatus comprising:

signal generator means for generating a positioning signal comprising a first half-field and a second half-field;

wherein each of the first and second half-fields comprises 313 segments; and

wherein each of the segments comprises 832 chips comprising an American Television Standards Committee (ATSC) digital television (DTV) segment synchronization signal and a pseudonoise sequence; and

transmitter means for transmitting the positioning signal.

10. The apparatus of claim 9, wherein the pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

a Global Positioning System L5 code.

11. The apparatus of claim 9, wherein a user terminal receives the positioning signal and determines the location of the user terminal based on the positioning signal.

12. The apparatus of claim 9, wherein the segments are generated at a segment rate, further comprising:

modulator means for modulating at least one of the group consisting of the first half-fields and the second half-fields of the positioning signal using a further pseudonoise sequence having a chip rate corresponding to the segment rate.

13. The apparatus of claim 9, wherein the further pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

a Global Positioning System L5 code.

14. The apparatus of claim 9, wherein the half-fields are generated at a half-field rate, further comprising:

modulator means for modulating at least one of the group consisting of the first half-fields and the second half-fields of the positioning signal using a binary data stream having a bit rate corresponding to the half-field rate.

15. The apparatus of claim 9, wherein the binary data stream represents at least one of the group consisting of:

a time of day;

a date; and

a year.

16. The apparatus of claim 9, further comprising:

time receiver means for receiving an accurate time signal;

wherein the transmitter means is further for transmitting the positioning signal according to the accurate time signal.

17. A method comprising:

generating a positioning signal comprising a first half-field and a second half-field; and

transmitting the positioning signal;

wherein each of the first and second half-fields comprises 313 segments; and

wherein each of the segments comprises 832 chips comprising an American Television Standards Committee (ATSC) digital television (DTV) segment synchronization signal and a pseudonoise sequence.

18.   The method of claim 17, wherein the pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

a Global Positioning System L5 code.

19.   The method of claim 17, wherein a user terminal receives the positioning signal and determines the location of the user terminal based on the positioning signal.

20.   The method of claim 17, wherein the segments are generated at a segment rate, further comprising:

modulating at least one of the group consisting of the first half-fields and the second half-fields of the positioning signal using a further pseudonoise sequence having a chip rate corresponding to the segment rate.

21.   The method of claim 17, wherein the further pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the 511-chip field synchronization signal; and

a Global Positioning System L5 code.

22.   The method of claim 17, wherein the half-fields are generated at a half-field rate, further comprising:

modulating at least one of the group consisting of the first half-fields and the second half-fields of the positioning signal using a binary data stream having a bit rate corresponding to the half-field rate.

23.   The method of claim 17, wherein the binary data stream represents at least one of the group consisting of:

a time of day;

a date; and

a year.

24.   Computer-readable media embodying instructions executable by a computer to perform a method comprising:

generating a positioning signal comprising a first half-field and a second half-field; and

transmitting the positioning signal;

wherein each of the first and second half-fields comprises 313 segments; and

wherein each of the segments comprises 832 chips comprising an American Television Standards Committee (ATSC) digital television (DTV) segment synchronization signal and a pseudonoise sequence.

25.   The media of claim 24, wherein the pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

a Global Positioning System L5 code.

26.   The media of claim 24, wherein a user terminal receives the positioning signal and determines the location of the user terminal based on the positioning signal.

27.   The media of claim 24, wherein the segments are generated at a segment rate, wherein the method further comprises:

modulating at least one of the group consisting of the first half-fields and the second half-fields of the positioning signal using a further pseudonoise sequence having a chip rate corresponding to the segment rate.

5   28.   The media of claim 24, wherein the further pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the 511-chip field synchronization signal; and

a Global Positioning System L5 code.

10   29.   The media of claim 24, wherein the half-fields are generated at a half-field rate, wherein the method further comprises:

modulating at least one of the group consisting of the first half-fields and the second half-fields of the positioning signal using a binary data stream having a bit rate corresponding to the half-field rate.

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30.   The media of claim 24, wherein the binary data stream represents at least one of the group consisting of:

a time of day;

a date; and

20   a year.

31.   An apparatus for determining the position of a user terminal, comprising:

a receiver adapted to receive, at the user terminal, an positioning signal comprising a first half-field and a second half-field;

25   wherein each of the first and second half-fields comprises 313 segments;

wherein each of the segments comprises 832 chips comprising an American Television Standards Committee (ATSC) digital television (DTV) segment synchronization signal and a pseudonoise sequence; and

a pseudorange unit adapted to generate a pseudorange based on the positioning signal;

30   wherein the location of the user terminal is determined based on the pseudorange and a location of the transmitter of the positioning signal.

32.   The apparatus of claim 31, wherein the pseudonoise sequence comprises a
portion of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

a Global Positioning System L5 code.

33.   The apparatus of claim 31:

wherein the receiver is further adapted to receive a further signal selected from the
group consisting of

a digital television signal,

a global positioning signal, and

a mobile telephone signal;

wherein the pseudorange unit is further adapted to generate a further pseudorange
based on the further signal; and

wherein the location of the user terminal is determined based on the pseudorange, the
location of the transmitter of the positioning signal, the further pseudorange, and a location of
the transmitter of the further signal.

34.   The apparatus of claim 31, further comprising:

a processor adapted to determine the location of the user terminal based on the
pseudorange and the location of the transmitter of the positioning signal.

35.   The apparatus of claim 34, wherein the processor is further adapted to
determine the location of the user terminal based on the pseudo-range, the location of the
transmitter of the positioning signal, and a difference between a transmitter clock at the
transmitter of the positioning signal and a known time reference.

36.   The apparatus of claim 31, further comprising:

a time-gated delay-lock loop adapted to track the positioning signal.

37.   The apparatus of claim 31, further comprising:

a memory adapted to store a portion of the positioning signal; and

a correlator adapted to correlate the stored portion of the positioning signal and a signal generated by the user terminal.

38. The apparatus of claim 31, further comprising:

a correlator adapted to correlate the positioning signal with a signal generated by the user terminal as the positioning signal is received.

39. The apparatus of claim 31, wherein the processor is further adapted to:

determine a general geographic area within which the user terminal is located; and

determine the position of the user terminal based on the pseudo-range and the general geographic area.

40. The apparatus of claim 31, wherein the processor is further adapted to:

determine a terrain elevation in a vicinity of the user terminal; and

determine the position of the user terminal based on the pseudo-range and the terrain elevation.

41. The apparatus of claim 31, wherein the segments occur at a segment rate, and wherein the positioning signal further comprises a further pseudonoise sequence having a chip rate corresponding to the segment rate, further comprising:

a correlator adapted to identify a transmitter of the positioning signal based on the further pseudonoise sequence.

42. The apparatus of claim 31, wherein the half-fields occur at a half-field rate, and wherein the positioning signal further comprises a binary data stream having a bit rate corresponding to the half-field rate, further comprising:

a correlator adapted to recover a binary data stream.

43. A user terminal comprising the apparatus of claim 31.

44.   An apparatus for determining the position of a user terminal, comprising:

receiver means for receiving, at the user terminal, an positioning signal comprising a first half-field and a second half-field;

wherein each of the first and second half-fields comprises 313 segments;

5   wherein each of the segments comprises 832 chips comprising an American Television Standards Committee (ATSC) digital television (DTV) segment synchronization signal and a pseudonoise sequence; and

pseudorange means for generating a pseudorange based on the positioning signal;

wherein the location of the user terminal is determined based on the pseudorange and

10   a location of the transmitter of the positioning signal.

45.   The apparatus of claim 44, wherein the pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

15   a Global Positioning System L5 code.

46.   The apparatus of claim 44:

wherein the receiver means is further for receiving a further signal selected from the group consisting of

20   a digital television signal,

a global positioning signal, and

a mobile telephone signal;

wherein the pseudorange means is further for generating a further pseudorange based on the further signal; and

25   wherein the location of the user terminal is determined based on the pseudorange, the location of the transmitter of the positioning signal, the further pseudorange, and a location of the transmitter of the further signal.

47.   The apparatus of claim 44, further comprising:

30   processor means for determining the location of the user terminal based on the pseudorange and the location of the transmitter of the positioning signal.

48.   The apparatus of claim 47, wherein the processor means is further for determining the location of the user terminal based on the pseudo-range, the location of the transmitter of the positioning signal, and a difference between a transmitter clock at the transmitter of the positioning signal and a known time reference.

49.   The apparatus of claim 44, further comprising:
time-gated delay-lock loop means for tracking the positioning signal.

50.   The apparatus of claim 44, further comprising:
memory means for storing a portion of the positioning signal; and
correlator means for correlating the stored portion of the positioning signal and a signal generated by the user terminal.

51.   The apparatus of claim 44, further comprising:
correlator means for correlating the positioning signal with a signal generated by the user terminal as the positioning signal is received.

52.   The apparatus of claim 44, wherein the processor means is further for:
determining a general geographic area within which the user terminal is located; and
determining the position of the user terminal based on the pseudo-range and the general geographic area.

53.   The apparatus of claim 44, wherein the processor means is further for:
determining a terrain elevation in a vicinity of the user terminal; and
determining the position of the user terminal based on the pseudo-range and the terrain elevation.

54.   The apparatus of claim 44, wherein the segments occur at a segment rate, and wherein the positioning signal further comprises a further pseudonoise sequence having a chip rate corresponding to the segment rate, further comprising:

correlator means for identifying a transmitter of the positioning signal based on the further pseudonoise sequence.

55. The apparatus of claim 44, wherein the half-fields occur at a half-field rate, and wherein the positioning signal further comprises a binary data stream having a bit rate corresponding to the half-field rate, further comprising:

correlator means for recovering a binary data stream.

56. A user terminal comprising the apparatus of claim 44.

57. A method for determining the position of a user terminal, comprising:

receiving, at the user terminal, a positioning signal comprising a first half-field and a second half-field;

wherein each of the first and second half-fields comprises 313 segments;

wherein each of the segments comprises 832 chips comprising an American Television Standards Committee (ATSC) digital television (DTV) segment synchronization signal and a pseudonoise sequence; and

generating a pseudorange based on the positioning signal;

wherein the location of the user terminal is determined based on the pseudorange and a location of the transmitter of the positioning signal.

58. The method of claim 57, wherein the pseudonoise sequence comprises a portion of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

a Global Positioning System L5 code.

59. The method of claim 57, further comprising:

receiving a further signal selected from the group consisting of

a digital television signal,

a global positioning signal, and

a mobile telephone signal;

generating a further pseudorange based on the further signal;

wherein the location of the user terminal is determined based on the pseudorange, the location of the transmitter of the positioning signal, the further pseudorange, and a location of the transmitter of the further signal.

60.   The method of claim 57, further comprising:

determining the location of the user terminal based on the pseudorange and the location of the transmitter of the positioning signal.

61.   The method of claim 60, further comprising:

determining the location of the user terminal based on the pseudo-range, the location of the transmitter of the positioning signal, and a difference between a transmitter clock at the transmitter of the positioning signal and a known time reference.

62.   The method of claim 57, further comprising:

tracking the positioning signal with a time-gated delay-lock loop.

63.   The method of claim 57, further comprising:

storing a portion of the positioning signal; and

correlating the stored portion of the positioning signal and a signal generated by the user terminal.

64.   The method of claim 57, wherein determining a pseudo-range comprises:

correlating the positioning signal with a signal generated by the user terminal as the positioning signal is received.

65.   The method of claim 57, further comprising:

determining a general geographic area within which the user terminal is located; and

determining the position of the user terminal based on the pseudo-range and the general geographic area.

66.   The method of claim 57, further comprising:

determining a terrain elevation in a vicinity of the user terminal; and

determining the position of the user terminal based on the pseudo-range and the terrain elevation.

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67.   The method of claim 57, wherein the segments occur at a segment rate, and wherein the positioning signal further comprises a further pseudonoise sequence having a chip rate corresponding to the segment rate, further comprising:

identifying a transmitter of the positioning signal based on the further pseudonoise

10   sequence.

68.   The method of claim 57, wherein the half-fields occur at a half-field rate, and wherein the positioning signal further comprises a binary data stream having a bit rate corresponding to the half-field rate, further comprising:

15   recovering the binary data stream.

69.   Computer-readable media embodying instructions executable by a computer to perform a method for determining the position of a user terminal, the method comprising:

selecting, at the user terminal, a positioning signal comprising a first half-field and a

20   second half-field;

wherein each of the first and second half-fields comprises 313 segments;

wherein each of the segments comprises 832 chips comprising an American Television Standards Committee (ATSC) digital television (DTV) segment synchronization signal and a pseudonoise sequence; and

25   generating a pseudorange based on the positioning signal;

wherein the location of the user terminal is determined based on the pseudorange and a location of the transmitter of the positioning signal.

70.   The media of claim 69, wherein the pseudonoise sequence comprises a portion

30   of at least one of the group consisting of:

a rotated version of the ATSC DTV field synchronization signal; and

a Global Positioning System L5 code.

71.   The media of claim 69, wherein the method further comprises:

generating a further pseudorange based on a further signal selected from the group

consisting of

a digital television signal,

a global positioning signal, and

a mobile telephone signal; and

wherein the location of the user terminal is determined based on the pseudorange, the

location of the transmitter of the positioning signal, the further pseudorange, and a location of

the transmitter of the further signal.

72.   The media of claim 69, wherein the method further comprises:

determining the location of the user terminal based on the pseudorange and the

location of the transmitter of the positioning signal.

73.   The media of claim 72, wherein the method further comprises:

determining the location of the user terminal based on the pseudo-range, the location

of the transmitter of the positioning signal, and a difference between a transmitter clock at the

transmitter of the positioning signal and a known time reference.

74.   The media of claim 69, wherein the method further comprises:

tracking the positioning signal.

75.   The media of claim 69, wherein the method further comprises:

storing a portion of the positioning signal; and

correlating the stored portion of the positioning signal and a signal generated by the

user terminal.

76.   The media of claim 69, wherein determining a pseudo-range comprises:

correlating the positioning signal with a signal generated by the user terminal as the positioning signal is received.

77. The media of claim 69, wherein the method further comprises:

determining a general geographic area within which the user terminal is located; and

determining the position of the user terminal based on the pseudo-range and the general geographic area.

78. The media of claim 69, wherein the method further comprises:

determining a terrain elevation in a vicinity of the user terminal; and

determining the position of the user terminal based on the pseudo-range and the terrain elevation.

79. The media of claim 69, wherein the segments occur at a segment rate, and wherein the positioning signal further comprises a further pseudonoise sequence having a chip rate corresponding to the segment rate, wherein the method further comprises:

identifying a transmitter of the positioning signal based on the further pseudonoise sequence.

80. The media of claim 69, wherein the half-fields occur at a half-field rate, and wherein the positioning signal further comprises a binary data stream having a bit rate corresponding to the half-field rate, wherein the method further comprises:

recovering the binary data stream.